

Rapid Prototyping a Semantic Web Application for Cultural Heritage: The Case of MANTIC

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Abstract. MANTIC¹ is a Web application that integrates heterogenous and legacy data about the archeology of Milan (Italy); the application combines semantic Web and mashup technologies. Semantic Web models and technologies supports model-driven and standard-compliant data integration on the Web; the mashup approach supports a spatial and temporal aware form of information presentation. MANTIC shows that model-driven information integration applications for cultural heritage can be fast prototyped with limited deployment effort by combining semantic and mashup technologies. Instead, higher-level modeling aspects need a deep analysis and require domain expertise.

1 Introduction and Motivation

Semantic Web technologies (SWT) natively provide support for model-based information integration, exchange and processing by offering Web-compliant knowledge representation languages (e.g. RDF, RDFS and OWL), query and reasoning engines. Mashup technologies (MTs) [1] provide support for simple application integration and for aggregating heterogeneous information on the Web. Combining SWTs and MTs it is possible to build data-driven Web applications with limited efforts and costs, by reusing available information sources and models, and information presentation layers. Model-driven information integration, and reuse of application services are particularly attractive in the field of cultural heritage (CH) because of a number of issues that characterize the domain.

First of all, available funds are often limited, in particular when an application is not part of a large national or international project. Second, although a ISO standard conceptual reference model for CH has been recently developed, i.e. the CIDOC CRM², most of data sources are still based on legacy models and non trivial ontology-based mappings are needed in order to support information integration. Furthermore the frequent and heterogeneous spatial and temporal references (e.g. multiple spatial references and different historical classification systems), require reasoning capabilities (e.g. on temporal intervals); such references are crucial to support the access to the information (e.g. by map-based result presentation and timelines rendering), which makes the

¹ <http://www.lintar.disco.unimib.it:8080/mantic/>

² <http://cidoc.ics.forth.gr/>